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EXAMINER

ZALUKAEVA, TATYANA

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 16

Application Number: 09/554,090
Filing Date: June 14, 2000
Appellant(s): CHMELIR ET AL.

MAILED

AUG 14 2002

GROUP 1700

Richard Treanor
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 14, 2002.

(1) *R al Party in Interest*

A statement identifying the real party in interest is contained in the brief.

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(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The reference to Anderson is a primary reference, the reference to Chmelir is a secondary reference. The rejection is made under 35 U.S.C. 103(a) over Anderson in view of Chmelir.

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(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because the reasons why the claims do not stand or fall together are not provided.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4,954,562	Anderson	9/1990
4,929,711	Chmelir	5/1990

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 13-31 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Anderson (U.S. 4,954,562) in view of Chmelir (U.S. 4,929,711). This rejection is set forth in prior Office Action, Paper No. 13.

Anderson discloses a method of making **water absorbing** crosslinked acrylate resins by aqueous polymerization of **(A) acrylic acid neutralized 70 to 100 mole percent for example with ammonia and/or caustic alkali and/or an amine**; with (B) acrylamide in a mole ratio of 70 to 100 mole percent (A) to 30:0 mole percent (B); (C) styrene, in an amount of 0% to 25% based on the weight of acrylic acid or acrylate; and (D) a water miscible or a water soluble polyvinyl monomer in the presence of (E) a

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metal oxide, such as titanium dioxide, in an amount of 0.001% to 5% based on the total weight of (A), (B), (C), (D) and (E), such that the amount of (D) is 0.001 to 0.6 weight percent based on the total weight of (A), (B), (C), (D) and (E) (abstract, col. 3, lines 27-39). Polymerization takes place in the presence of one or more polymerization initiators. (col. 4, lines 9, 10, col. 10, lines 9-40). Ammonium hydroxide and ammonium carbonate are used as neutralizing agents (col. 5, lines 23-26)

In accordance with Anderson's invention the residual monomer content can be achieved less than 100 ppm (col. 11, lines 5-11). The polymerization proceeds very fast and usually requires from 30 sec to about 10 minutes (col. 11, lines 35-38).

Therefore the limitations of claim 24 and dependent claims for providing acid monomer with comonomers partially or completely neutralizing the monomer with basic nitrogen containing compound, and free radical polymerizing such monomer(s), as well as basic conditions of the process are fulfilled.

The disclosure of Anderson differs from the instant claims in not disclosing **subsequent heating of a polymer at a temperature of 120 to 240°**.

However, **Anderson** provides a motivation to do so by emphasizing two factors:

- a) the major factor is necessity to obtain polymers with low monomer content
- b) citing several specific examples, wherein the temperature of reaction itself is 130-135° (Example 19), or 120° (Example 6).

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Drying polymers after polymerization at elevated temperatures is conventionally used in polymer chemistry for a variety of reasons, such as get rid of unreacted monomers, remove the traces of solvent, etc.

Thus Chmelir discloses a method of preparing homopolymers or copolymers that are water-soluble or swell up in water and **have a low residual monomer content** by treating them with an amine compound. The homopolymer or copolymer in the swollen form and in the form of a gel or in the form of a solution is treated with a compound, such as for example ammonia, an ammonium salt, an alkylamine and/or one of their salts or a hydroxylamine and/or their salts, subsequent to polymerization the resulting polymer gel or polymer solution is **dried at an elevated temperature, which is 50-150°C** (see abstract and col.2, lines 37-38).

Since both Anderson and Chmelir intend to develop a process to obtain a polymer with **low residual monomer content**, and Anderson suggests embodiments with the elevated temperature, not particularly elucidating subsequent treatment of a polymer, one skilled in the art would have found it obvious to utilize a conventional drying step of Chmelir as discussed above in the process of Anderson after polymerization is completed in order to **further** reduce the residual monomer content with the reasonable expectation of success.

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(11) Response to Argument

Applicants argument with regard to claims 13-31 have been considered, but they are not persuasive.

The only motivated argument is presented with regard to generic claim 24. All other arguments are mere conclusory statements that the art does not teach or suggest the claimed limitations. Therefore, the arguments to claim 24 will be first addressed.

The first Applicants' argument is that the prima facie case of obviousness was not established by the Examiner, because Anderson teaches away from the subsequent heating of a polymer. Appellants cite column 2, lines 41-46, column 3, lines 55-57, column 4, lines 8-13, 22-27, and column 6, lines 42-47, as allegedly showing such "teaching away.

Examiner disagrees with such position, and respectfully draws Appellants' attention to their own recitation, namely to column 4, lines 22-27 of Anderson. This passage does not at all eliminate drying, but provides drying by the heat generated during a reaction. Therefore, the drying does exist, although not provided by external source, but by an internal source. However, the limitation "subsequently" does not eliminate the possibility of drying with the heat energy generated during a reaction.

Then Appellants state that the Examples showing that the reaction takes place at the temperatures up to 135° C, "is not a teaching of a subsequent heating step".

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In response to this, it is the Examiner's position that had Anderson teach the subsequent heating, then Anderson would have been used as 35 U.S.C. 102 (b) reference with "clear anticipation" of each and every limitation of the instant claim 24. In the instant case the temperature of Anderson's reaction, as well as the "drying" which is present in Anderson were discussed to show the motivation provided by Anderson for a drying step. After all the heat is the heat, no matter if it came from the reaction itself or from the outside source.

The next Appellants' argument resides in the contention that the deficiency of Anderson is not cured by Chmelir, because in Chmelir the polymer is first formed and then neutralized, and then dried, compare to the pre-neutralization of monomers in the instant claims and further polymerization of neutralized monomers.

In response to this, it is noted here that the Examiner never attempted to apply the Chmelir's reference to the order of neutralization and polymerization. Chmelir was applied to show, how the most conventional step in the art of polymer chemistry, namely the step drying by of heating of Chmelir can be applied to Anderson's process.

In the next argument (see paragraph bridging pages 3 and 4 of the Brief), Appellants argue the difference between neutralization of Anderson and treatment with amines in Chmelir.

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Once again, Appellants are reminded that the reference to Chmelir cannot be regarded by itself, not can be the Anderson reference. "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art., as per *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also *In re Sneed*, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir.1983).

The last Appellants argument with regard to the generic claim 24 is that "since Anderson does not demonstrate the need for subsequent drying and utilizes only the heat of reaction for drying, a person skilled in the art would not be directed to incorporate steps of Chmelir into the process of Anderson".

In response to this argument, Examiner would like to address two issues:

a) In Examiner's opinion the motivation to dry polymers is expressed in Anderson, as discussed above. In his preferred embodiment, the drying step is not include, however, the disclosed examples and preferred embodiments do not constitute a teaching away from a **broader disclosure or nonpreferred embodiments**. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971) and a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred

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embodiments. **Merck & Co. v. Biocraft Laboratories**, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

b) The second issue is that it is well settled that suggestion to modify the art to produce the claimed invention need not be expressly stated in one or all the references used to show obviousness, **Cable Elec. Prods., Inc. v. Genmark, Inc.** 770 F. 2d 1015, 226 USPQ 881,886 (Fed. Cir. 1985) The motivation to combine references comes from “three sources: the nature of the problem to be solved, (in the instant case the process directed to obtaining polymers with low residual monomer content) the teaching of the prior art (motivation provided by Anderson) and the **knowledge of persons of ordinary skill in the art**”, as per **In re Rouffet**, 149 F3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

Response to Argument with regard to claims 13-16, 18-23, 25-31.

1) Argument: claim 13 set forth specific compound, which is not disclosed or suggested by either of the cited references.

Answer: Ammonia of claim 13, as a neutralization agent is disclosed throughout , abstract, line 4, column 3, line 67, etc.

2) Argument: claim 14 set forth specific compound, which is not disclosed or suggested by either of the cited references.

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Answer: Ammonia of claim 14, as a neutralization agent is disclosed throughout , abstract, line 4, column 3, line 67, etc.

3) Argument: claim 15 indicates a neutralization range not shown in combination of references.

Answer: neutralization level of the instant claim 15 (10-100%) is shown in Anderson , who describes neutralization level 70-100% (see abstract, line 3).

5) Argument: claim 16 indicates specific monomers not shown in combination of references.

Answer: monomers of claim 16 are disclosed in both references, see for example abstract of Anderson, lines 2, 3 and column 3 in Chmelir, lines 43-46).

6) Argument: claim 18 indicates specific monomers to be used with the acid monomer, which is not shown in combination of references.

Answer: vinyl acetate as a possible comonomer is disclosed in Chmelir in column 3, line 48.

7) Argument: claim 19 recites specific bi- or polyfunctional monomers, which is not shown in either of the cited references.

Answer: Anderson: In accordance with an important embodiment

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of the present invention, the polyvinyl monomer crosslinking agent should be present in the aqueous solution. Such specific monomers are listed in column 7, lines 7-15.

8) Argument: claim 20 recites temperature range for drying step, which is not shown in the combination of references.

Answer: Temperature of drying is recited in Chmelir, whose reference is used to introduce this step into a combined process, such temperature is 50-150°C (see column 2 of Chmelir, line 37).

9) Argument: claims 21-23 recite specific range of residual monomer content which is not shown in the combination of references.

Answer: Anderson discloses the process, which leads to the very low residual monomer content, namely less than 100 PPM in the completed water-absorbing polymer (column 11, lines 10-12).

10) Argument: claim 25 recites specific nitrogen compound, which is not shown in the combination of references.

Answer: Ammonia of claim 25, as a neutralization agent is disclosed throughout , abstract, line 4, column 3, line 67, etc.

11) Argument: claim 26 recites specific acid monomers, which is not shown in the combination of references.

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Answer: the monomers of acrylic and methacrylic acid of claim 26 are clearly named by Anderson, see abstract of Anderson, lines 2, 3 and also disclosed in column 3, lines 43-46 of Chmelir.

12) Argument: claim 27 recites specific comonomers, which is not shown in the combination of references.

Answer: the monomers of claim 27, such as styrene is named by Anderson, in abstract, line 6, and all the monomers of claim 27 are named in Chmelir, in column 3, lines 43-64.

13) Argument: claims 28-31 show the time of heating, which is not specifically set forth in the combination of references.

Answer: Chmelir discloses the drying which lasts from **10-180** minutes, column 2, lines 38-42.

Based on the above, all Appellants statements that the references do not teach or suggest the claimed limitations with regard to claims 13-23, and 25-31 are wrong.

Conclusory statements in brief, which is apparently the instant case, are not entitled to probative weight, **In re Wood**, 199 USPQ 137 (CCPA 1978), **In re DeBlauwe**, 222 USPQ 191 (Fed. Cir. 1984).

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For the above reasons, it is believed that the rejections should be sustained.

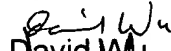
Respectfully submitted,

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August 6, 2002

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